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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/061,800	01/30/2002	Svetlana V. Shchegrova	10010464-1	1874

7590 06/02/2005

AGILENT TECHNOLOGIES, INC.
Legal Department, DL429
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EXAMINER	
TRAN, MY CHAU T	

ART UNIT	PAPER NUMBER
1639	

DATE MAILED: 06/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/061,800	SHCHEGROVA ET AL.	
	Examiner	Art Unit	
	MY-CHAU T. TRAN	1639	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 March 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-48* is/are pending in the application.

4a) Of the above claim(s) *34-48* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 May 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

5-0-0

DETAILED ACTION

Application and Claims Status

1. Applicant's response filed 03/25/2005 is acknowledged and entered.

2. Claims 1-48 are pending.

Election/Restrictions

3. Claims 34-48 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to ***nonelected inventions***, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 04/19/2004.

4. This application contains claims 34-48 drawn to inventions nonelected with traverse in the reply filed on 04/19/2004. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

5. Claims 1-33 are treated on the merit in this Office Action.

Maintained Rejection(s)

Claim Rejections - 35 USC § 103

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 1-3, 5-19, 21-29, and 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown et al. (US Patent 5,807,522) and Tisone et al. (US Patent 6,063,339).

Brown et al. disclose a method and apparatus for forming microarray (Abstract; col. 3, line 24 to col. 4, line 15). The apparatus use in the method for forming microarray comprises a positioning structure (transport system), a dispensing structure (head system), and a control unit (processor) that control the positioning and dispensing structures (i.e. controlling where the droplet is place on the substrate to produce the desired pattern) (col. 3, lines 59 to col. 4, lines 15). The dispensing structure comprises a dispensing device (dispenser) for depositing a fluid onto the surface of the substrate, which can be one or a plurality of dispensers (col. 4, lines 12-15). The method comprises of loading the dispenser with a reagent solution, moving the dispenser to a selected position with respect to a support surface, dispensing the solution reagent onto the surface of the substrate, and the steps are repeated to produce an array (col. 7, lines 55-65; col. 9, lines 5-10; col. 10, line 63 to col. 11, line 28).

The method of Brown et al. does not expressly include the step of identifying an error dispenser.

Tisone et al. disclose a method and apparatus for forming an array (Abstract; col. 3, line 63 to col. 4, line 13). The apparatus comprises a dispensing head (head system) mounted on or in association with a gantry (transport system), and a controller (col. 7, line 8 to col. 8, line 55). The apparatus further comprises multiple dispensing head (col. 7, lines 61-64; col. 22, lines 16-31). The method comprises the steps of loading the dispenser with a solution, dispensing droplets from the dispensers onto the substrate, and repeating the dispensing sequence steps to form an array (col. 7 line 8 to col. 8, line 55; col. 22, line 48 to col. 23, line 12). The method

further comprise of the controller would determine a phase adjustment for each dispense cycle either before or during production such that a high degree of accuracy, precision, and repeatability is attained (i.e. detecting any error made by the dispenser and taking corrective measurement) (col. 8, lines 48-55).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the step of identifying an error dispenser as taught by Tisone et al. in the method of Brown et al. One of ordinary skill in the art would have been motivated to include the step of identifying an error dispenser in the method of Brown et al. for the advantage of providing an apparatus dispenser system wherein the control system that precisely coordinates dispensing operations with a high degree of accuracy, precision, and repeatability since both Brown et al. and Tisone et al. disclose the method of using an dispenser system to make an array (Brown: col. 3, line 24 to col. 4, line 15; Tisone: col. 3, line 63 to col. 4, line 13). Furthermore, one of ordinary skill in the art would have reasonably expectation of success in the combination of Brown et al. and Tisone et al. because Tisone et al. disclose by examples of using the dispenser system in making an array.

8. Claims 4, 20, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown et al. (US Patent 5,807,522) and Tisone et al. (US Patent 6,063,339) as applied to claims 1-3, 5-19, 21-29, and 31-33 above, and further in view of Gamble et al. (US Patent 5,958,342).

Both Brown et al. and Tisone et al. disclose a method and apparatus for forming microarray (Brown: Abstract; col. 3, line 24 to col. 4, line 15; Tisone: Abstract; col. 3, line 63 to col. 4, line 13). The apparatus use in the method for forming microarray comprises a transport

system, a head system, and a processor that control the positioning and dispensing structures (i.e. controlling where the droplet is place on the substrate to produce the desired pattern) (Brown: col. 3, lines 59 to col. 4, lines 15; Tisone: col. 7, line 8 to col. 8, line 55; col. 22, lines 16-31). The method comprises of loading the dispenser with a reagent solution, moving the dispenser to a selected position with respect to a support surface, dispensing the solution reagent onto the surface of the substrate, and the steps are repeated to produce an array (Brown: col. 7, lines 55-65; col. 9, lines 5-10; col. 10, line 63 to col. 11, line 28; Tisone: col. 7 line 8 to col. 8, line 55; col. 22, line 48 to col. 23, line 12). The method of Tisone et al. further comprise of the controller would determine a phase adjustment for each dispense cycle either before or during production such that a high degree of accuracy, precision, and repeatability is attained (i.e. detecting any error made by the dispenser and taking corrective measurement) (col. 8, lines 48-55). Thus the method combination of Brown et al. and Tisone et al. would have been obvious for the advantage of providing an apparatus dispenser system wherein the control system that precisely coordinates dispensing operations with a high degree of accuracy, precision, and repeatability since both Brown et al. and Tisone et al. disclose the method of using an dispenser system to make an array.

However, both the method of Brown et al. and Tisone et al. does not expressly disclose that the dispenser is pulse jet.

Gamble et al. disclose a device and method for precise production of arrays of microspots (Abstract; col. 1, lines 49-61; col. 12, line 61 to col. 13, line 25). The device comprise pulse jet dispensers, a control system that move the dispensers from the storage bank to the dispensing site for directing droplets to predetermined site on the surface (col. 2, lines 43-65). The pulse jetting

dispenser would provide a more rugged device that produces an accurate, repetitive dispensing of droplets (col. 15, lines 1-17).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to include a pulse jet dispenser as taught by Gamble et al. in the apparatus of Brown et al. and Tisone et al. One of ordinary skill in the art would have been motivated to include a pulse jet dispenser in the apparatus of Brown et al. and Tisone et al. for the advantage of providing a more rugged device that produces an accurate, repetitive dispensing of droplets (Gamble col. 15, lines 1-17) since Brown et al., Tisone et al., and Gamble et al. disclose the method of using an dispenser system to make an array (Brown: col. 3, line 24 to col. 4, line 15; Tisone: col. 3, line 63 to col. 4, line 13; Gamble: Abstract). Furthermore, one of ordinary skill in the art would have reasonably expectation of success in the combination of Brown et al., Tisone et al., and Gamble et al. because gamble et al. discloses using the jetting device system in making an DNA array (col. 14, lines 41-67).

Response to Amendment

9. The declaration filed on 03/25/2005 under 37 CFR 1.131 is sufficient to overcome the Agilent Technologies Inc. (Agilent) (GB 2,355,716 A) reference.

Terminal Disclaimer

10. The terminal disclaimer filed on 03/25/2005 disclaiming the terminal portion of any patent granted on this application, which would extend beyond the expiration date of 09/628,470

that is now US Patent 6,890,760 B1, has been reviewed and is accepted. The terminal disclaimer has been recorded.

Withdrawn Rejection(s)

11. Applicant's arguments, see pg. 11, filed 03/25/2005, with respect to the rejection under 35 USC 112, second paragraph, have been fully considered and are persuasive. This rejection of claims 1-33 has been withdrawn.

12. The rejection of claims 1-33 under 35 USC 102(a) as being anticipated by Agilent Technologies Inc. (Agilent) (GB 2,355,716 A) has been withdrawn in light of applicant's filed declaration under C.F.R. §1.131.

13. The provisional rejection under the judicially created doctrine of obviousness-type double patenting of claims 1-33 over claims 1-13 of copending Application 09/628,470 has been withdrawn in view of the terminal disclaimer filed on 03/25/2005.

Response to Arguments

14. Applicant's arguments directed to the rejection under 35 USC 103(a) as being unpatentable over Brown et al. (US Patent 5,807,522) and Tisone et al. (US Patent 6,063,339) for claims 1-3, 5-19, 21-29, and 31-33 were considered but they are not persuasive for the following reasons.

Applicant alleges that the combine teaching of Brown et al. and Tisone et al. is not obvious over the presently claimed method because a) neither Brown et al. nor Tisone et al. teach or suggest that 1) a head system with multiple dispensing heads, and 2) loading any dispenser with the same fluid; b) Tisone et al. does not teach or suggest an error identification method; c) there is no motivation to combine the teaching because the devices of Brown et al. and Tisone et al. are not physically combinable. Therefore, the combine teaching of Brown et al. and Tisone et al. is not obvious over the presently claimed method.

Applicant's arguments are not convincing since the combine teaching of Brown et al. and Tisone et al. is obvious over the presently claimed method.

First, Brown et al. do disclose loading any dispenser with the same fluid (see col. 3, lines 46-50; col. 7, lines 55-59). Second, both Brown et al. and Tisone et al. disclose a head system with multiple dispensing heads (Brown: col. 4, lines 12-15; Tisone: col. 7, lines 61-67). Third, Tisone et al. does not teach or suggest an error identification method (col. 19, lines 1-13).

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5

USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to combine the teaching of Brown et al. and Tisone et al. is found in the teaching of Tisone et al., i.e. the advantage of providing an apparatus dispenser system wherein the control system that precisely coordinates dispensing operations with a high degree of accuracy, precision, and repeatability (Tisone: col. 3, line 63 to col. 4, line 13). Furthermore in response to applicant's argument that the devices of Brown et al. and Tisone et al. are not physically combinable, the examiner recognizes that "the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference.... Rather, the test is what the combined teachings of those references would have suggested to those of ordinary skill in the art." *In re Keller*, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). See MPEP § 2145 and § 2143.01. In this case, the combine teaching of Brown et al. and Tisone et al. would have suggested to those of ordinary skill in the art to produce an apparatus dispenser system with the control system that precisely coordinates dispensing operations with a high degree of accuracy, precision, and repeatability.

Thus the combine teaching of Brown et al. and Tisone et al. is obvious over the presently claimed method, and the rejection is maintained.

15. Applicant's arguments directed to the rejection under 35 USC 103(a) as being unpatentable over Brown et al. (US Patent 5,807,522) and Tisone et al. (US Patent 6,063,339) as applied to claims 1-3, 5-19, 21-29, and 31-33, and further in view of Gamble et al. (US Patent 5,958,342) for claims 4, 20, and 30 were considered but they are not persuasive for the following reasons.

Applicant argues that the combine teaching of Brown et al., Tisone et al., and Gamble et al. is not obvious over the presently claimed method because a) neither Brown et al. nor Tisone et al. teach or suggest that 1) a head system with multiple dispensing heads, and 2) loading any dispenser with the same fluid; b) Tisone et al. does not teach or suggest an error identification method; c) there is no motivation to combine the teaching because the devices of Brown et al. and Tisone et al. are not physically combinable. Therefore, the combine teaching of Brown et al., Tisone et al., and Gamble et al. is not obvious over the presently claimed method.

Applicant's arguments are not convincing since the combine teaching of Brown et al., Tisone et al., and Gamble et al. is obvious over the presently claimed method.

First, Brown et al. do disclose loading any dispenser with the same fluid (see col. 3, lines 46-50; col. 7, lines 55-59). Second, both Brown et al. and Tisone et al. disclose a head system with multiple dispensing heads (Brown: col. 4, lines 12-15; Tisone: col. 7, lines 61-67). Third, Tisone et al. does not teach or suggest an error identification method (col. 19, lines 1-13).

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5

USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to combine the teaching of Brown et al. and Tisone et al. is found in the teaching of Tisone et al., i.e. the advantage of providing an apparatus dispenser system wherein the control system that precisely coordinates dispensing operations with a high degree of accuracy, precision, and repeatability (Tisone: col. 3, line 63 to col. 4, line 13). Furthermore in response to applicant's argument that the devices of Brown et al. and Tisone et al. are not physically combinable, the examiner recognizes that "the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference.... Rather, the test is what the combined teachings of those references would have suggested to those of ordinary skill in the art." *In re Keller*, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). See MPEP § 2145 and § 2143.01. In this case, the combine teaching of Brown et al. and Tisone et al. would have suggested to those of ordinary skill in the art to produce an apparatus dispenser system with the control system that precisely coordinates dispensing operations with a high degree of accuracy, precision, and repeatability.

Thus the combine teaching of Brown et al., Tisone et al., and Gamble et al. is obvious over the presently claimed method, and the rejection is maintained.

Conclusion

16. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to My-Chau T. Tran whose telephone number is 571-272-0810. The examiner can normally be reached on Monday: 8:00-2:30; Tuesday-Thursday: 7:30-5:00; Friday: 8:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew J. Wang can be reached on 571-272-0811. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mct
May 26, 2005

PADMASHRI PONNALURI
PRIMARY EXAMINER